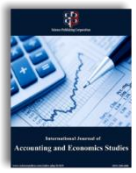
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Research paper



Strategies to Enhance The Adoption of Indonesian Halal Cosmetic Products: A Multi-Actor Analytic Network Process Approach

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Abstract

This study aims to analyze the priority of problems, solutions, and strategic pathways for enhancing the adoption of halal cosmetic products in Indonesia through a multi-actor approach involving academics, regulators, and industry practitioners. The challenges faced by the halal cosmetic industry remain largely structural, stemming from both internal factors—such as the insufficient integration of halal compliance, product safety, and efficacy—and external constraints, particularly the high dependence on imported raw materials with unverified halal status. This study employs the Analytic Network Process (ANP) to map interrelationships among key elements and to determine priority levels based on their relative influence. Data were collected through focus group discussions and expert judgments, and subsequently analyzed using a causal network framework. The findings reveal that the most critical issues lie in the weak integration of halal principles within the production process and the reliance on imported raw materials. The most prioritized solutions include inter-institutional halal diplomacy and the strengthening of market-oriented halal research, while the most influential strategic directions are government support for halal research ecosystems, digitalization of business processes, and the development of halal supply chain partnerships. The novelty of this study lies in its integration of a multi-actor analytical framework, the causal mapping of strategic interactions using ANP, and the operationalization of Maqasid al-Shāṭibī into an implementable industrial model for the halal cosmetics sector. These findings offer a comprehensive strategic model that can serve as a policy roadmap for the development of the national halal industry.

Keywords: *Halal Cosmetics; Halal Supply Chain; Partnership; Digitalization; Marketing Strategy.*

1. Introduction

The global halal industry has experienced rapid expansion over the past two decades, driven not only by the growth of the Muslim population but also by increasing awareness among non-Muslim consumers regarding ethical consumption, product safety, and sustainability. Among the various sectors within the halal economy, the halal cosmetics industry has emerged as one of the fastest-growing segments, reflecting a convergence of religious compliance, health consciousness, and lifestyle preferences (Wilson & Liu, 2011; Lada et al., 2009). Halal cosmetics are therefore increasingly positioned not merely as religiously compliant products, but as symbols of quality assurance, ethical sourcing, and production transparency (Tieman, 2015).

Indonesia, as the country with the largest Muslim population in the world, holds significant strategic potential to become a global hub for halal cosmetics. However, despite this demographic advantage, the adoption and competitiveness of Indonesian halal cosmetic products remain relatively weak compared to regional leaders such as Malaysia and emerging global producers from South Korea and Europe (Alserhan, 2010; Hassan & Bojei, 2011). This disparity reveals a persistent gap between market potential and industry performance, pointing to deeper structural and strategic constraints.

One of the key challenges underlying this gap is the limited integration of halal principles across the entire production and value creation process. In many cases, halal certification is treated as a post-production compliance requirement rather than being embedded in product design, formulation, sourcing, and quality control (Tieman, van der Vorst, & Ghazali, 2012). Such a fragmented approach weakens consumer trust and diminishes the credibility of halal claims, particularly in a market where consumers are increasingly information-sensitive and quality-oriented (Aziz & Chok, 2013).

Beyond internal production issues, structural constraints within the broader supply chain further inhibit the development of Indonesia's halal cosmetics industry. Heavy reliance on imported raw materials—often with uncertain halal status or limited traceability—exposes producers to supply chain vulnerabilities, regulatory uncertainty, and higher production costs (Zailani et al., 2018). These challenges are amplified by the complexity of global supply chains, where halal compliance must be maintained across multiple jurisdictions with differing standards and governance regimes (Tieman, 2017).

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From a policy perspective, the Indonesian government has demonstrated commitment to halal industry development through halal product assurance regulations and the establishment of supporting institutions. Nevertheless, policy effectiveness is highly contingent upon coordination among multiple actors, including regulators, certification bodies, industry players, research institutions, and consumers (Hassan, Chachi, & Abdul Latiff, 2008). In the absence of a coherent multi-actor strategic framework, these initiatives risk remaining fragmented and producing suboptimal outcomes.

Existing literature on halal cosmetics has largely emphasized consumer behavior, purchase intention, branding, and religiosity (Lada et al., 2009; Aziz & Chok, 2013; Elseidi, 2018). While valuable, this consumer-centric focus provides limited insight into how institutional, supply chain, and strategic challenges can be addressed holistically at the industry level. Moreover, empirical studies that explicitly integrate multi-stakeholder perspectives—particularly those involving regulators, academics, and industry practitioners—remain scarce, especially in emerging halal markets such as Indonesia.

Methodologically, most prior studies rely on conventional statistical approaches, such as regression analysis or structural equation modeling, which often assume linear and unidirectional relationships among variables. Such assumptions may be insufficient to capture the interdependent and feedback-driven nature of strategic decision-making in halal industry development (Saaty, 2005). The Analytic Network Process (ANP), by contrast, enables the modeling of complex causal relationships and interdependencies among decision elements, making it particularly suitable for analyzing multi-actor industrial ecosystems (Saaty & Vargas, 2013). Despite its growing application in policy and supply chain research, ANP remains underutilized in halal cosmetics studies.

Beyond methodological limitations, a further conceptual gap exists in translating Islamic ethical frameworks into actionable industrial strategies. Although Maqasid al-Shariah—particularly the Al-Shāṭibī framework—has been widely discussed in Islamic economics and finance (Chapra, 2008; Auda, 2008), its operationalization within manufacturing and consumer goods industries remains limited. In the context of halal cosmetics, maqasid principles such as the protection of life (hifz al-nafs), intellect (hifz al-'aql), and wealth (hifz al-mal) offer a normative foundation for product safety, innovation, and sustainable value creation, yet their translation into concrete strategic priorities requires an integrative analytical approach.

In response to these gaps, this study proposes a comprehensive strategic framework for enhancing the adoption of Indonesian halal cosmetic products. It seeks to identify and prioritize key problems, solutions, and strategic directions through a multi-actor perspective involving academics, regulators, and industry practitioners, employing the Analytic Network Process to capture the complex causal relationships among institutional, technological, market, and supply chain factors.

The contribution of this study is threefold. First, it advances halal industry scholarship by shifting from a predominantly consumer-centric approach to a systemic, ecosystem-based analysis. Second, it offers methodological novelty by applying ANP to map interdependencies and strategic priorities within the halal cosmetics industry. Third, it operationalizes Maqasid al-Shāṭibī as an implementable industrial strategy, bridging the gap between Islamic ethical theory and practical policy design.

From a practical standpoint, the findings provide insights for policymakers in designing more coherent halal industry strategies, for industry players seeking to enhance competitiveness and consumer trust, and for researchers pursuing interdisciplinary approaches to halal studies. By addressing both structural and strategic dimensions, this research contributes to the development of a resilient, competitive, and ethically grounded halal cosmetics ecosystem in Indonesia.

2. Theoretical Framework

2.1. Halal cosmetics as a strategic industry

Halal cosmetics represent a strategic intersection between religious compliance, consumer ethics, and industrial competitiveness. Conceptually, halal cosmetics are defined as personal care products whose ingredients, production processes, storage, and distribution comply with Islamic law (Shariah), ensuring that they are free from prohibited substances and harmful elements (Tieman et al., 2012). Beyond religious observance, halal certification has evolved into a multidimensional market signal encompassing product safety, quality assurance, ethical sourcing, and supply chain transparency, which increasingly appeals to both Muslim and non-Muslim consumers (Wilson & Liu, 2011; Aziz & Chok, 2013).

From an industrial perspective, halal cosmetics operate within an integrated ecosystem involving suppliers, manufacturers, certifying bodies, regulators, research institutions, and consumers. The effectiveness of this ecosystem depends not only on compliance mechanisms but also on innovation capacity, supply chain resilience, and strategic coordination among stakeholders (Tieman, 2017). Accordingly, the development of halal cosmetics as a strategic industry requires analytical frameworks that explicitly capture institutional interdependencies and cross-actor coordination, rather than focusing solely on certification outcomes.

2.2. Multi-actor perspective and stakeholder theory

The multi-actor approach adopted in this study is theoretically grounded in stakeholder theory, which posits that organizational and policy outcomes are shaped by interactions among multiple stakeholders rather than by a single dominant actor (Freeman, 1984). In the halal cosmetics context, this includes regulators and certification authorities, industry practitioners, academic and research institutions, and consumers as demand-side actors.

While previous studies on halal industries predominantly emphasize consumer religiosity and purchase intention (Lada et al., 2009; Elseidi, 2018), this consumer-centric orientation tends to overlook the systemic nature of halal assurance and industry development. Stakeholder theory suggests that misalignment across regulatory frameworks, industrial capabilities, and knowledge ecosystems can significantly constrain strategic implementation (Mitchell et al., 1997). By adopting a multi-actor framework, this study advances existing literature by addressing halal cosmetics as a coordinated industrial system rather than a fragmented market phenomenon.

2.3. Halal supply chain and institutional theory

The halal supply chain is a critical determinant of halal cosmetic adoption, as compliance must be ensured throughout upstream sourcing, production, and downstream distribution. Institutional theory offers a robust lens for explaining how regulatory pressures, normative expectations, and cognitive legitimacy jointly shape firm behavior in halal markets (DiMaggio & Powell, 1983). Consequently, halal certification functions not only as a compliance mechanism but also as a strategic tool for legitimacy-building and competitive positioning (Zailani et al., 2018).

However, institutional constraints can generate structural challenges, particularly in emerging economies where domestic halal-compliant input industries remain underdeveloped. Dependence on imported raw materials with ambiguous halal status reflects institutional voids and coordination failures within national supply chains (Khanna & Palepu, 2010). This study conceptualizes halal supply chain partnerships and inter-institutional halal diplomacy as strategic mechanisms to mitigate such institutional gaps, aligning regulatory ambitions with industrial capacity and global market integration.

2.4. Strategic digitalization and market orientation

Digitalization increasingly underpins transparency, traceability, and operational efficiency in halal industries. From a strategic management perspective, digital technologies enable the integration of halal assurance systems, real-time supply chain visibility, and enhanced stakeholder communication (Porter & Heppelmann, 2014). In halal cosmetics, digital traceability reduces information asymmetry related to ingredient sourcing and certification credibility, thereby strengthening consumer trust (Tieman, 2017).
This technological perspective is complemented by market orientation theory, which emphasizes systematic understanding of consumer needs, proactive market sensing, and coordinated organizational responses (Narver & Slater, 1990). Therefore, halal cosmetic adoption is not solely driven by regulatory compliance but also by market-driven innovation supported by digital infrastructure and research ecosystems, enabling firms to align ethical commitments with competitive performance.

2.5. Maqasid al-shāṭibī as a normative strategic foundation

A distinctive contribution of this study lies in integrating Maqasid al-Shariah—particularly the Al-Shāṭibī framework—into an operational industrial strategy. Maqasid al-Shariah articulates the higher objectives of Islamic law, encompassing the protection of religion (hifz al-din), life (hifz al-nafs), intellect (hifz al-'aql), wealth (hifz al-mal), and lineage (hifz al-nasl) (Auda, 2008; Chapra, 2008).
Within the halal cosmetics industry, these objectives can be translated into strategic dimensions, including product safety and non-toxicity (hifz al-nafs), innovation and knowledge development (hifz al-'aql), sustainable value creation (hifz al-mal), and ethical branding and legitimacy (hifz al-din). However, much of the existing literature treats maqasid primarily as a normative or philosophical construct, with limited operationalization at the policy or industry strategy level. This study addresses this gap by embedding maqasid principles directly into an ANP-based decision framework, linking ethical objectives with actionable strategic priorities.

2.6. Analytic network process (ANP) as an integrative decision framework

The Analytic Network Process (ANP) serves as the methodological foundation of the proposed framework. Unlike the Analytic Hierarchy Process (AHP), which assumes linear and independent relationships, ANP explicitly accommodates interdependence and feedback among decision elements (Saaty, 2005). This makes ANP particularly suitable for analyzing complex industrial ecosystems characterized by multi-actor interactions and reciprocal influences.
In this study, ANP is employed to model causal linkages among constraints, policy instruments, and strategic alternatives across stakeholder groups. By deriving priority weights from expert judgments, ANP enables the identification of strategic interventions that are both ethically grounded and operationally feasible (Saaty & Vargas, 2013). The integration of ANP with stakeholder theory and maqasid principles represents a methodological advancement in halal industry research, allowing normative values and empirical decision-making to be analyzed within a unified model.

2.7. Conceptual synthesis and research gap

Drawing on stakeholder theory, institutional theory, market orientation, and Islamic ethical economics, this framework conceptualizes halal cosmetic adoption as a dynamic outcome of coordinated multi-actor interactions, supply chain governance, technological capability, and normative orientation. Government support, digitalization, halal supply chain partnerships, and research ecosystem development are positioned as strategic leverage points shaping industry performance and sustainability.
Despite the growing literature on halal cosmetics, existing studies remain fragmented—often focusing on consumer behavior, certification compliance, or ethical discourse in isolation. There is a clear research gap in integrative frameworks that simultaneously address multi-stakeholder dynamics, institutional constraints, digital transformation, and maqasid-based ethical objectives using a formal decision-making model. This study fills that gap by operationalizing these dimensions through an ANP-based framework, providing a systematic foundation for empirical analysis and evidence-based policy formulation in the halal cosmetics sector.

3. Research Method

3.1. Research design and approach

This study adopts a descriptive qualitative research design, which aims to provide an in-depth and systematic depiction of the strategies required to strengthen the adoption of local halal cosmetic products in Indonesia. Descriptive qualitative research is particularly suitable for exploring complex social and industrial phenomena where understanding processes, meanings, and stakeholder perspectives is essential (McDonald et al., 2019). Through this approach, the study seeks to capture how strategic decisions are formulated, implemented, and perceived within the halal cosmetics industry.
A qualitative approach was selected because it enables the researcher to explore the nuanced perceptions, experiences, and interpretations of multiple actors involved in halal cosmetic development, including regulators, academics, and industry practitioners (Noyes et al., 2019). Unlike quantitative approaches that emphasize numerical relationships, qualitative inquiry focuses on uncovering the underlying meanings and contextual dynamics that shape decision-making processes (Creswell, 1998). This approach is particularly relevant for understanding consumer motivations, production challenges, regulatory constraints, and strategic priorities within the halal cosmetics ecosystem.
Furthermore, qualitative research facilitates the exploration of broader socio-economic and institutional contexts, such as government regulations, global market trends, and demographic changes that influence halal cosmetic strategies (Busetto et al., 2020; Darlington & Scott, 2020). By integrating these contextual factors, the study generates practical insights and policy-relevant recommendations for strengthening the competitiveness of Indonesia's halal cosmetics industry (Yanto & Ramdani, 2023).

3.2. Research flow

The research process began with problem identification and objective formulation. The primary research problem focuses on identifying effective strategies to enhance the adoption and competitiveness of local halal cosmetic products in Indonesia. Initial observations were conducted to identify challenges and opportunities faced by the industry, including consumer perceptions, regulatory frameworks, and existing marketing strategies.

After defining the research objectives, the study proceeded to data collection and analysis. Data were gathered using qualitative methods, including in-depth interviews, participant observation, and document analysis. In-depth interviews were conducted with key stakeholders to explore their experiences, perspectives, and strategic insights. Participant observation enabled the researcher to directly observe marketing practices and production processes, while document analysis involved reviewing industry reports, academic publications, and promotional materials. The collected data were analyzed using thematic analysis to identify recurring patterns and dominant themes, which subsequently informed the construction of the ANP model and strategic recommendations.

3.3. Research location and timeframe

The study was conducted in Medan City, Indonesia, a strategically important market for halal cosmetics. The selection of Medan was supported by sales performance data from Ramadan 2024 reported by compas.co.id, which identified brands such as Hanasui, Purbasari, Oh My Glam, and Wardah as among the top-performing cosmetic brands nationally.

The research was conducted over seven months, from June to December 2024, encompassing stages of planning, literature review, data collection, data analysis, report writing, and final publication. This extended timeframe ensured methodological rigor and allowed for iterative validation of findings.

3.4. Data types and sources

This study utilized both primary and secondary data. Primary data were obtained through in-depth interviews with experts from regulatory institutions, academia, and industry practice. Secondary data were collected through an extensive literature review of academic journals, industry reports, policy documents, and market analyses related to halal cosmetics and halal marketing strategies.

Based on insights derived from interviews and literature review, a structured pairwise comparison questionnaire was developed to support the ANP analysis. The questionnaire was designed to capture expert judgments on the relative importance and interdependence of strategic factors influencing halal cosmetic adoption.

3.5. Expert selection and sampling technique

Expert respondents were selected using purposive sampling, based on their expertise, institutional roles, and direct involvement in the halal cosmetics ecosystem. A total of seven experts participated in the study, representing regulators, academics, and industry practitioners. This multi-actor composition ensured a comprehensive and interdisciplinary perspective.

Table 1: List of Initial Informants

No	RESPONDENTS NAME	INITIAL INFORMANT	OCCUPATION
1	Ir. H. Putu Rahwidhiyasa MBA, CIPM	PR	Regulator
2	Drs. Martin Suhendri, Apt. M.Farm	MS	Regulator
3	Retni Kustiyah Mardi Ati, S,Si, M.Si	RK	regulator
4	Dr. Apt Nina Salamah S.Si., M.Sc	NS	Akademisi
5	Dr. Tengku Ismanelly Hanum S.Si., M.Si	TI	Akademisi
6	Azhar Nasikh Ulwan	AN	Praktisi
7	Djoni Siahaan, S.Si., Apt	DS	Praktisi

Regulatory experts were selected for their authority and experience in halal policy formulation, product safety, and certification. Academic experts contributed theoretical insights related to cosmetic formulation, halal research, and innovation trends. Industry practitioners provided practical perspectives on production processes, supply chain challenges, and market implementation. The combination of these expert groups enhanced the validity and relevance of the ANP judgments.

3.6. Data collection techniques

Data collection was primarily conducted through in-depth interviews, which required careful preparation to ensure relevance and accuracy (Berry et al., 2021). An interview guide consisting of open-ended questions was developed in alignment with the research objectives. Interviews were conducted either face-to-face or via digital communication platforms when direct meetings were not feasible.

During interviews, the researcher employed probing and clarification techniques to elicit detailed and reflective responses, while also paying attention to non-verbal cues to enhance contextual understanding (Mertens, 2023). All interviews were transcribed verbatim and systematically documented to ensure data completeness and traceability (Awasthy, 2019).

The interview transcripts were analyzed using coding and thematic analysis, allowing the researcher to identify key themes and strategic dimensions relevant to halal cosmetic development (Merriam & Grenier, 2019). Ethical considerations were strictly observed, including informed consent, confidentiality, and voluntary participation.

3.7. Analytic network process (ANP) procedure

Data analysis employed the Analytic Network Process (ANP), a multi-criteria decision-making method designed to address complex problems involving interdependent factors (Saaty, 2005). ANP extends the Analytical Hierarchy Process (AHP) by allowing feedback and dependence among criteria and alternatives, making it particularly suitable for strategic and policy-oriented analysis (Abdel-Baset et al., 2019; Namin et al., 2019). The ANP procedure consisted of three main stages:

Stage 1: Model Construction

The research problem was decomposed into clusters and elements through an iterative process combining literature review and semi-structured expert interviews. Themes emerging from the interviews were coded and mapped onto preliminary constructs identified in the literature, ensuring that the ANP structure reflected both theoretical relevance and contextual realities of the halal cosmetics industry. Relationships among elements were then specified as either inner dependence (within clusters) or outer dependence (across clusters). This qualitative-to-quantitative transition ensured that expert insights directly informed the structure of the ANP network rather than being treated as separate inputs. The resulting network model was validated by experts to confirm conceptual accuracy and practical relevance.

Stage 2: Model Quantification

Pairwise comparison questionnaires were administered based on the finalized ANP network, using a 1–9 scale to assess the relative importance of elements. The data were processed using SuperDecisions software, which facilitated systematic computation of priority weights. Consistency was assessed using the Consistency Ratio (CR), with a threshold of $CR \leq 0.10$ to ensure reliable judgments (Saaty & Vargas, 2013).

Stage 3: Synthesis and Analysis

After consistency validation, priority weights were synthesized to generate global priorities. Kendall's Coefficient of Concordance (W) was employed to measure inter-rater agreement among experts, with values approaching 1 indicating strong consensus. The synthesized results translated qualitative expert assessments into a ranked strategic structure, forming the basis for subsequent interpretation and policy recommendations.

3.8. Justification for ANP application

ANP was chosen due to its ability to model interdependent and feedback-driven relationships among strategic factors such as innovation, regulation, digitalization, and consumer perception. By integrating qualitative expert insights into a formal decision network, ANP bridges exploratory understanding and quantitative prioritization. Its systematic pairwise comparison approach enables objective weighting while accommodating expert judgment, making ANP highly relevant for formulating robust strategies to enhance halal cosmetic adoption in complex, multi-actor environments.

4. Result and Discussion

4.1. Priority analysis of internal problems in the halal cosmetics industry

The Analytic Network Process (ANP) results reveal that internal structural problems represent the most critical constraints in increasing the adoption of halal cosmetic products in Indonesia. Based on aggregated expert judgments from academics, regulators, and practitioners, the analysis consistently highlights integration, verification, and human resources (HR) as dominant internal issues, outweighing market-related and innovation-oriented concerns. The level of agreement among experts for internal problem prioritization is strong, as indicated by Kendall's Coefficient of Concordance ($W = 0.74$), suggesting a high degree of consensus across respondent groups. To enhance clarity and parsimony, detailed pairwise comparison matrices are condensed into a priority ranking of internal problems, as presented in Table 2.

Table 2: Priority Ranking of Internal Problems in the Halal Cosmetics Industry

Rank	Internal Problem	Dominant Expert Preference
1	Weak halal–safety–efficacy integration	Very high
2	Limited halal verification capability	High
3	Human resource competency gaps	High
4	Regulatory complexity	Moderate
5	Market-related constraints	Moderate
6	Product innovation limitations	Lower

The dominance of integration-related issues reflects the inability of many cosmetic manufacturers to holistically embed halal compliance throughout the production lifecycle—from raw material sourcing to formulation, processing, and post-market surveillance. This finding aligns with prior studies emphasizing that halal compliance in cosmetics cannot be treated as an add-on certification but must be structurally embedded within product development and quality assurance systems (Bonne & Verbeke, 2008; Tieman, 2011).

Furthermore, verification challenges—including limited laboratory capacity, fragmented certification procedures, and insufficient traceability—emerge as a major bottleneck. This corroborates the institutional theory perspective, which posits that weak regulatory and verification infrastructures undermine trust and market legitimacy in halal industries (Scott, 2014; Wilson & Liu, 2010). Human resource limitations further exacerbate these challenges, particularly the lack of interdisciplinary expertise combining cosmetic science, halal jurisprudence, and regulatory compliance.

4.2. External constraints: raw material dependency as a structural risk

Beyond internal challenges, the ANP results demonstrate strong consensus among respondents that dependence on imported raw materials with unverified halal status constitutes the most severe external constraint. Across all respondent groups, imported raw materials consistently dominate regulatory and distribution-related issues. This prioritization exhibits a very strong level of expert agreement, with Kendall's W reaching 0.81, indicating near-unanimous recognition of raw material dependency as a structural risk.

Table 3: Priority Ranking of External Problems

Rank	External Problem	Dominant Expert Preference
1	Dependence on imported raw materials	Very high
2	Distribution inefficiencies	Moderate
3	Regulatory barriers	Lower

This finding reflects Indonesia's structural vulnerability in the halal cosmetics value chain, where many critical ingredients—such as active compounds, preservatives, and emulsifiers—are sourced from non-Muslim-majority countries without standardized halal assurance

systems. Prior literature highlights that halal vulnerability often originates upstream in the supply chain, where opacity and cross-border complexity undermine compliance (Zailani et al., 2015; Khan et al., 2019).
From a Maqasid al-Shariah perspective, this dependency threatens both ḥifẓ al-dīn (protection of faith) and ḥifẓ al-nafs (protection of human well-being), as halal uncertainty intersects with safety and ethical concerns (Dusuki & Abdullah, 2007).

4.3. Priority solutions: institutional and knowledge-based interventions

The ANP-based solution analysis indicates that institutional and knowledge-driven interventions are prioritized over purely technical or operational fixes. Among internal solutions, halal diplomacy, certification strengthening, and market-oriented research emerge as the most influential mechanisms. Expert consensus on internal solution priorities is classified as strong (W = 0.69), reflecting consistent strategic preferences across stakeholder groups.

Table 4: Priority Ranking of Internal Solutions

Rank	Internal Solution	Dominant Expert Preference
1	Halal diplomacy and inter-agency coordination	Very high
2	Strengthening halal certification systems	High
3	Market-oriented halal research	High
4	Cross-sector collaboration	Moderate

The prominence of halal diplomacy reflects the growing need for cross-border recognition of halal standards, mutual recognition agreements (MRAs), and coordination among domestic institutions. This supports previous findings that fragmented governance structures weaken halal ecosystem performance (Tieman & Darun, 2017).
Externally, government involvement is ranked as the most critical solution, particularly in facilitating domestic raw material development and incentivizing halal-certified supply chains. The consensus level for external solutions is similarly high (W = 0.72), reinforcing the central role of the state in halal ecosystem development.

Table 5: Priority Ranking of External Solutions

Rank	External Solution	Dominant Expert Preference
1	Government intervention and policy support	Very high
2	Halal supply chain partnerships	High
3	Logistics and distribution enhancement	Moderate

This reinforces the view that halal industry development is inherently policy-driven, requiring active state participation to correct market failures and reduce structural dependency (Porter, 1990; DinarStandard, 2023).

4.4. Strategic priorities: digitalization as a systemic enabler

At the strategic level, digitalization consistently emerges as the most influential driver across expert groups, surpassing raw material development, R&D, and regulatory harmonization. Kendall's W value of 0.77 indicates strong agreement among experts regarding the primacy of digitalization as a systemic enabler of halal cosmetic adoption.

Table 6: Priority Ranking of Strategic Interventions

Rank	Strategy	Dominant Expert Preference
1	Digitalization of halal business processes	Very high
2	Government-led policy harmonization	High
3	Raw material development	High
4	Research and development (R&D)	Moderate
5	Product efficacy communication	Lower

Digitalization is perceived not merely as a technological upgrade but as a governance and trust-building mechanism, enabling traceability, real-time verification, and transparent communication with consumers. This finding aligns with recent studies highlighting digital halal ecosystems—such as blockchain-based traceability and halal assurance platforms—as key enablers of market expansion and consumer trust (Kamble et al., 2020; Ali et al., 2021).

4.5. Integrated discussion: toward a maqasid-based strategic model

Synthesizing the results, this study demonstrates that increasing the adoption of halal cosmetics in Indonesia requires systemic alignment across internal capabilities, external structures, and strategic governance mechanisms. The consistently high Kendall's W values (ranging from 0.69 to 0.81 across analytical stages) confirm that the resulting priority structure reflects strong and reliable expert consensus, strengthening the robustness of the ANP findings.
The findings extend existing halal industry literature by operationalizing Maqasid al-Shāṭibī into an implementable strategic framework, where:

- Integration and verification support ḥifẓ al-dīn and ḥifẓ al-nafs,
- Digitalization and governance enhance ḥifẓ al-māl (economic sustainability),
- Knowledge and institutional coordination promote ḥifẓ al-ʿaql (intellectual development).

By employing ANP, this study captures the causal interdependencies among actors and strategies, offering a more realistic representation of halal ecosystem dynamics than linear decision-making models. Consequently, the proposed framework provides a robust policy roadmap for strengthening Indonesia's halal cosmetic industry in both domestic and global markets.

5. Conclusion and Policy Implications

5.1. Conclusion

This study provides a comprehensive strategic analysis of how the adoption of halal cosmetic products in Indonesia can be effectively enhanced through a multi-actor and systems-based approach. By employing the Analytic Network Process (ANP), this research captures the complex causal interdependencies among internal constraints, external structural challenges, solution mechanisms, and strategic interventions within the halal cosmetics ecosystem.

The findings demonstrate that the primary barriers to halal cosmetic adoption are structural rather than market-driven. Internally, the most critical problems lie in the weak integration of halal principles across production processes, limited halal verification capacity, and insufficient human resource competencies. Externally, heavy dependence on imported raw materials with uncertain halal status emerges as the most significant vulnerability, posing risks to both product integrity and supply chain resilience. These challenges collectively constrain the credibility, scalability, and global competitiveness of Indonesia's halal cosmetic industry.

The solution analysis highlights the central role of institutional coordination and knowledge-based interventions, particularly halal diplomacy, certification system strengthening, and market-oriented halal research. At the strategic level, digitalization is identified as the most influential enabler, functioning not only as a technological tool but also as a governance mechanism that enhances traceability, transparency, and consumer trust. Government support—through regulatory harmonization, ecosystem development, and supply chain facilitation—consistently emerges as a critical catalyst across all analytical dimensions.

The key theoretical contribution of this study lies in its integration of a multi-actor ANP framework with the operationalization of Maqasid al-Shāṭibī into an implementable industrial strategy. Unlike prior studies that treat halal compliance, innovation, and market adoption as separate domains, this research demonstrates how these elements interact dynamically within a single decision-making network. Methodologically, the use of ANP allows for a more realistic representation of strategic priorities by accounting for feedback effects and interdependencies that are often overlooked in linear or hierarchical models.

Overall, this study advances the halal industry literature by offering a systemic, policy-relevant, and implementation-oriented strategic model that can guide Indonesia's efforts to strengthen its halal cosmetic sector and position itself as a global halal industry leader.

5.2. Policy implications

Based on the empirical findings and strategic synthesis, several key policy implications can be derived for regulators, industry stakeholders, and supporting institutions.

First, halal integration must be institutionalized across the entire production lifecycle. Policymakers should move beyond a certification-centric approach toward embedding halal assurance into national industrial standards for cosmetics. This includes integrating halal requirements into Good Manufacturing Practices (GMP), product safety regulations, and post-market surveillance systems. Such institutionalization will ensure that halal compliance is treated as a core production principle rather than a procedural formality.

Second, reducing dependence on imported raw materials should become a strategic national priority. The government can play a decisive role by incentivizing domestic production of halal-certified cosmetic ingredients through fiscal incentives, public–private partnerships, and targeted R&D funding. Establishing halal industrial parks and raw material innovation hubs would help strengthen upstream supply chain resilience while enhancing national value added.

Third, halal diplomacy should be strengthened as a formal policy instrument. Indonesia needs to proactively pursue mutual recognition agreements (MRAs) for halal certification, particularly with major exporting and ingredient-supplying countries. Coordinated inter-agency diplomacy involving halal authorities, trade ministries, and standardization bodies will reduce verification barriers, facilitate cross-border trade, and enhance international market access for Indonesian halal cosmetic products.

Fourth, digital transformation should be accelerated as a systemic enabler of the halal ecosystem. Policymakers should support the development of integrated digital platforms for halal certification, supply chain traceability, and compliance monitoring. Leveraging technologies such as blockchain, big data analytics, and interoperable certification databases will enhance transparency, reduce compliance costs, and strengthen consumer trust—particularly among younger and digitally literate consumers.

Fifth, human capital development must be aligned with the interdisciplinary nature of the halal cosmetics industry. Education and training programs should be designed to bridge cosmetic science, halal jurisprudence, regulatory compliance, and digital competencies. Collaborative initiatives involving universities, research institutes, certification bodies, and industry players are essential to creating a sustainable talent pipeline.

Finally, a coordinated halal governance framework is essential for long-term sustainability. The findings suggest that fragmented institutional roles undermine policy effectiveness. Establishing a centralized or highly coordinated halal industry governance mechanism—supported by clear role delineation and performance metrics—would enhance policy coherence and strategic alignment across ministries and stakeholders.

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